

CLAIMS

What is claimed is:

1. A system for providing a secure domain name service over a computer network, comprising:

a portal connected to a computer network, the portal authenticating a query for a secure computer network address; and

a domain name database connected to the computer network through the portal, the domain name database storing secure computer network addresses for the computer network.

2. The system of claim 1, wherein each secure computer network address is based on a non-standard top-level domain name.

3. The system of claim 2, wherein the non-standard top-level domain name is one of .scom, .sorg, .snet, .sgov, .sedu, .smil and .sint.

4. The system of claim 1, wherein the computer network includes the Internet.

5. The system of claim 1, wherein the secure portal comprises an edge router.

6. The system of claim 1, wherein the portal authenticates the query using a cryptographic technique.

7. The system of claim 1, wherein the portal is connectable to a virtual private network link through the computer network.

8. The system of claim 7, wherein the secure communication link is one of a plurality of secure communication links in a hierarchy of secure communication links.

9. The system of claim 7, wherein the virtual private network is based on inserting into each data packet one or more data values that vary according to a pseudo-random sequence.

10. The system of claim 7, wherein the virtual private network is based on a computer network address hopping regime that is used to pseudorandomly change computer network addresses in packets transmitted between a first computer and a second computer.

11. The system of claim 7, wherein the virtual private network is based on comparing a value in each data packet transmitted between a first computer and a second computer to a moving window of valid values.

12. The system of claim 7, wherein the virtual private network is based on a comparison of a discriminator field in a header of each data packet to a table of valid discriminator fields maintained for a first computer.

13. A method for registering a secure domain name, comprising steps of:
receiving a request for registering a secure domain name;
verifying ownership information for an equivalent non-secure domain name corresponding to the secure domain name;
registering the secure domain name in a secure domain name service when the ownership information for the equivalent non-secure domain name is consistent with ownership information for the secure domain name.

14. The method according to claim 13, wherein the step of verifying ownership information includes steps of:

determining whether the equivalent non-secure domain name corresponding to the secure domain name has been registered in a non-secure domain name service; and
querying whether the equivalent non-secure domain name should be registered in the non-secure domain name service when the equivalent non-secure domain name has not been registered in the non-secure domain name service.

15. A computer-readable storage medium, comprising:
a storage area; and

computer-readable instructions for a method for registering a secure domain name, the method comprising steps of:

- receiving a request for registering a secure domain name;
- verifying ownership information for an equivalent non-secure domain name corresponding to the secure domain name;
- registering the secure domain name in a secure domain name service when the ownership information for the equivalent non-secure domain name is consistent with ownership information for the secure domain name.

16. The computer-readable medium according to claim 15, wherein the step of verifying ownership information includes steps of:

- determining whether the equivalent non-secure domain name corresponding to the secure domain name has been registered in a non-secure domain name service; and
- querying whether the equivalent non-secure domain name should be registered in the non-secure domain name service when the equivalent non-secure domain name has not been registered in the non-secure domain name service.

17. A method for registering a domain name, comprising steps of:

- (i) receiving a request for registering a first domain name;
- (ii) verifying ownership information for a second domain name corresponding to the first domain name; and
- (iii) registering the first domain name when the ownership information for the second domain name is consistent with ownership information for the first domain name.

18. The method of claim 17, wherein the first domain name comprises a non-standard top-level domain and the second domain name comprises a standard top-level domain.

19. The method of claim 17, further comprising the step of storing information corresponding to the registration performed in step (iii) in a database separate from a database storing information for standard domain name registrations.

20. The method according to claim 17, wherein the step of verifying ownership information includes steps of:

- (a) determining whether the second domain name has been registered in a domain name service; and
- (b) querying whether the second domain name should be registered in the domain name service when the second domain name has not been registered in the domain name service.

21. A computer-readable medium, comprising computer-readable instructions for a method for registering a domain name, the method comprising steps of:

- (i) receiving a request for registering a first domain name;
- (ii) verifying ownership information for a second domain name corresponding to the first domain name; and
- (iii) registering the first domain name when the ownership information for the second domain name is consistent with ownership information for the first domain name.

22. The computer readable medium of claim 21, wherein the first domain name comprises a non-standard top-level domain and the second domain name comprises a standard top-level domain.

23. The computer-readable medium of claim 21, wherein the step of verifying ownership information includes steps of:

- (a) determining whether the second domain name has been registered in a domain name service; and
- (b) querying whether the second domain name should be registered in the domain name service when the second domain name has not been registered in the domain name service.